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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/807,686

04/30/2002

Robert A Leydier

01213/TL

2354

1933

7590

02/13/2003

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EXAMINER

CRANE, SARA W

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 02/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/807,686

Applicant(s)

LEYDIER ET AL.

Examiner

Sara W. Crane

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2 July 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 112

Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 2, "in particular an article of card format" is not clear. Does the claim language require "an article of card format," or is this phrase merely some sort of non-limiting example?

Claims 2-3 are not clear either. In claim 2, the protection is against the action of electromagnetic radiation "in the infrared range." In claim 3, the protection is for "the ultraviolet, visible, and infrared ranges." Claim 1 limits the range to "a wavelength longer than 1 μm ." A dependent claim must specify a further limitation to the subject matter of the claim or claims from which it depends. If the range of claim 1 is "longer than 1 μm ," then it is not clear how the ranges of claim 2 and 3 can include shorter wavelengths than 1 μm . In what sense do claims 2 and 3 further limit the subject matter of claim 1?

Allowable Subject Matter

Claims 5-9 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and if the rejection under 35 U.S.C. 112, second paragraph set forth above is overcome. The prior art does not

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teach or suggest doped silicon as a means for protecting the circuits as set forth in claim 1 from infrared radiation at a wavelength longer than 1 micron.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 10-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCormick in view of Ishikawa et al., 5,394,014.

McCormick is directed to chip-containing portable articles, for example a smart card (column 1, lines 66-67). Figure 1 shows chip 112, under an addition layer of silicon (upper chip 120) covering the entire chip 112. It would have been obvious to include circuits in chip 112 defining a central processor unit and memories, in order to allow for programmable (and reprogrammable) logic as is well-known in the art. Ishikawa et al. teaches in the paragraph spanning columns 1 and 2 the need to protect semiconductor chips from radiation which causes errors and leakage in the semiconductor material. Column 4, lines 55-60, teaches specifically a metal layer for protection. It would have been obvious to include such a protective layer in the device of McCormick in order to provide the protection desired by Ishikawa et al. A metal layer would inherently provide shielding for infrared radiation at a wavelength longer than 1 μm , because metal has free electrons which absorb such infrared radiation. Alternatively, the McCormick

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packaging substrate 106, and metal balls 104, would also inherently absorb infrared radiation, because balls 104 are made of metal, and because substrate 106 is thick enough to provide protection.

With respect to claims 2-3, the metal and black polyimide layers as taught by Ishikawa et al. would provide protection from all wavelengths, and not just long wavelength infrared. With respect to claim 4, figure 1 of McCormick shows sealing layer 122. With respect to claims 10-11, McCormick balls 116 are surface irregularities. With respect to claim 12, McCormick balls 114 are in the bottom face of additional layer 120. With respect to claim 13, additional balls on the top surface of layer 120 would have been obvious to allow for additional chips to be included in the stack. With respect to claim 14, the Ishikawa protective layer includes at least one layer of metal. With respect to claims 15 and 19, it would have been obvious to optimize the thickness of the metal layer in order to optimize its ability to absorb undesired radiation. With respect to claims 16-18, metal layers at the top and bottom of a chip are taught in Ishikawa et al. figure 6 (layers 61 and 7 can be metal).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Crane, whose telephone number is (703) 308-4894.

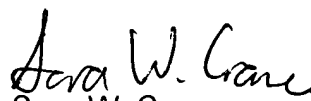
The fax phone number for this Group is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist, whose telephone number is (703) 308-0956.

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Sara W. Crane
Primary Examiner
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